Barriers to student access to patients in a group of teaching hospitals

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ABSTRACT

Objectives: To determine the number of patients in our teaching hospitals who were, on any given day, both available and willing to see medical students.

Design and setting: Repeated cross-sectional audit in four teaching hospitals in the greater Newcastle area of New South Wales (one tertiary referral hospital, two district general hospitals, and one hospital combining general medicine and surgery with specialised oncology services). Audits were conducted three times, 2 months apart.

Participants: All adult inpatients in the four hospitals.

Main outcome measures: Numbers of patients present and accessible to students, present but inaccessible, absent, or unfit to be seen for clinical reasons; numbers of patients who agreed to history-taking and physical examination by a medical student.

Results: Of 1960 patients, 959 (49%) were present and accessible to students. Only 11% were absent, and the most common reason students could not see patients was that the patients were said by nursing staff to be unfit to see medical students (25%). Of those present and accessible, 70% said they would agree to provide a history, and 67% that they would agree to physical examination.

Conclusions: Across all four teaching hospitals about 200–250 patients are available and willing to see medical students on any given day. This is too few to provide our current student population of 500 with extensive clinical experience.

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Medical students need to see many patients to develop strong clinical skills. However, bedside teaching is in steady decline.[1-4] The reasons for this have been studied extensively,[5-7] without demonstrating obvious ways to reverse the decline. In any case, it is important that students take histories and perform physical examinations on their own, so they need to spend time seeing patients unsupervised.

The medical program of the University of Newcastle has developed indicative standards for the number of patients a student should, ideally, see each week; this varies from three for second-year students to 10 for students in their final year. When these targets were promulgated, our students declared that they were unachievable because, in their opinion, there were not enough accessible patients. In the wards they found that many patients were absent undergoing diagnostic tests, unwilling to be seen, or already being seen by students.

We wished to know if this was true, and therefore conducted an audit to determine (i) the number of patients a medical student could see in our teaching hospitals, and (ii) what factors limited student access to patients.

METHODS

The study was approved by the University of Newcastle Human Research Ethics Committee and by the Hunter Area Research Ethics Committee.

The audit was conducted by four students (all in Year 4 of the 5-year medical course) who approached patients in the teaching hospitals of the greater Newcastle area, New South Wales: John Hunter Hospital, Newcastle Mater Hospital, Belmont District Hospital and Maitland District Hospital. These hospitals range in size from 75 to 550 beds and have between 4000 and 14 000 admissions (other than day-stay admissions) annually. These hospitals provide different services, with most oncology services being provided at the Newcastle Mater Hospital and most subspecialty medical services being provided at John Hunter Hospital. The four students who conducted the audit were randomly selected from respondents to an internal advertisement seeking research assistants; the only exclusion criterion was having overdue assessment tasks.

The audit was conducted on three different week days in July, September and November, 2002. Each student visited a single hospital and surveyed all wards except the paediatric wards and the intensive care unit. On arrival at the hospital, the student visited each ward and distributed information sheets about the study to all patients. If the nursing staff indicated that a patient ought not to be approached for medical or other reasons, the patient was recorded as unfit to be seen or inaccessible. After completing this round of the wards, the student revisited the wards and asked all the patients they could find if they would agree to be involved in the audit. Consenting patients were asked, "If I asked you now, would you agree to spend the next 45 minutes to 1 hour talking to me about your health problems?", and "If I asked you now, would you agree to my performing an examination of the part of your body most affected by your illness (for example, your heart)?"

The students recorded whether the patients in each ward were medically unfit to be seen, present but not accessible, present and accessible, or absent. The definition of medically unfit was left to the nursing staff on each ward. "Present but inaccessible" was anticipated to include patients who had told the staff they did not wish to see students, those who were being seen by other health professional staff, and those who were surrounded by visitors, and whom the student did not feel able to approach. For each patient who was accessible, the students recorded their sex and estimated age as 18–25, 26–45, 46–65, and over 65 years.

If accessible patients agreed to answer the two audit questions, the student recorded the answers as "yes" or "no", together with any comments made. Patients who declined to answer the questions were recorded as

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1 Patients accessible to medical students in the four hospitals over three visits

Hospital	Present and accessible	Present, but inaccessible	Absent	Unfit to be seen	Total
1	374 (37%)	215 (21%)	139 (14%)	281 (28%)	1009
2	91 (53%)	5 (3%)	23 (13%)	53 (31%)	172
3	218 (59%)	59 (16%)	41 (11%)	54 (15%)	372
4	276 (68%)	11 (3%)	16 (4%)	104 (26%)	407
Total	**959 (49%)**	**290 (15%)**	**219 (11%)**	**492 (25%)**	**1960**

answering "no" to both. Students were permitted (but not required) to record comments on matters such as the attitude of nursing staff to their presence.

Statistical analysis

Data were analysed using StatsDirect version 1.9 (StatsDirect Ltd, Cheshire, United Kingdom). Differences in proportions were tested by means of χ^2 statistics, and logistic regression was used to evaluate differences in willingness to see students according to hospital, and patients' age and sex.

RESULTS

There were 2152 records collected over the three visits to the four hospitals. The four hospitals had 38 wards, so a total of 114 wards were surveyed over the three visits. In some cases, nursing staff prevented students from entering a ward at all, so that a visit to the ward was recorded, but there was no reliable estimate of the number of beds or patients. Over the three visits, students were told that all patients in that ward were unsuitable to be seen by medical students on clinical grounds in nine of the 114 wards; in one case, the student recorded the impression that this declaration had been made as a matter of principle, rather than on the basis of a consideration of each patient's condition. When records of empty and closed beds and completely inaccessible wards were removed, there was information available for 1960 patients.

The accessibility of patients is shown in Box 1. Forty-nine per cent (959/1960) of the patients were both present and accessible to medical students. There were some statistically significant variations between the hospitals in the proportions of patients present, absent, or inaccessible, and these proportions also varied from visit to visit.

Of the 1001 patients (51%) who were not available, 22% were absent and 29% were present but inaccessible. The most common reason recorded for patients being present but inaccessible was that they were asleep (32 patients), had visitors (22 patients), or were being seen by medical or allied health staff (22 patients).

The most common reason patients could not be seen was that they were thought to be unfit on clinical grounds, either by nursing staff or after initial assessment by the student (25% of all patients and 49% of those not available to be seen; Box 1). Reasons for these patients being classified as unfit to be seen were not required to be recorded, and in most cases no reason was recorded. Twenty-eight patients classified as unfit to be seen had a reason or comment recorded; the most common was dementia (13 patients). Other reasons recorded were inadequate command of English (4), a hearing problem (1), infection control issues (5), being a palliative care patient (3), and being a day-stay patient (1). Two further patients recorded as present and accessible were found by the student to be obviously confused and therefore should probably have been considered unfit to be seen.

The numbers of patients present and accessible who answered "yes" to the two audit questions are shown in Box 2. Overall, about two-thirds of patients who were accessible were willing to see a student. Most patients who agreed to see a student also agreed to both history-taking and physical examination. Older patients were slightly less willing to see students for history taking (odds ratio [OR], 0.94; 95% CI, 0.91–0.98; $P = 0.002$,) and have physical examinations performed (OR, 0.94; 95% CI, 0.91–0.98; $P = 0.004$,), but there was no difference associated with the sex of the patient (OR, 1.02; 95% CI, 0.98–1.06). One patient was recorded as agreeing to see female students only, and one answered "yes", but added "no Asian students". Three patients recorded as being willing to see a student added the qualification that they would agree only if a doctor was present as well. The proportion of patients answering "yes" to both audit questions varied slightly by hospital (with those in Hospital 2 more likely than those in the other hospitals) and by data collection day (least likely on collection Day 1).

2 Patients who were present and accessible, and agreed to history-taking and physical examination by medical students

Sex and age goup	Present and accessible	History*	Physical examination*
Male			
16–25 years	18	13 (72%)	15 (83%)
26–45 years	65	56 (86%)	55 (85%)
46–65 years	104	78 (75%)	76 (73%)
> 65 years	221	167 (75%)	158 (71%)
Age missing	1	0	0
Female			
16–25 years	35	27 (77%)	27 (77%)
26–45 years	128	86 (67%)	77 (60%)
46–65 years	110	71 (65%)	68 (62%)
> 65 years	263	170 (65%)	164 (62%)
Age missing	1	1	1
Sex not recorded	13	4	4
Total	**959**	**673 (70%)**	**645 (67%)**

* Percentages are of the number present and accessible in each sex and age group. ◆

DISCUSSION

Our study has shown that in the teaching hospitals of our area, about half the patients are accessible to students, and of these about two-thirds will agree to see students. That is, about a third of the patients in these hospitals can be seen on any given day by a medical student working independently. There were 959 accessible, willing patients

over 3 days — about 320 per day. As we have about 500 students over the 5 years of the medical course, our students were probably correct in their belief that the expected number of patients students should see was unrealistic.

The major barrier to students seeing patients was the designation of patients as unfit to be seen. In our sample, this designation was largely determined by the nursing staff. Clearly, designating a whole ward of up to 30 patients as "unfit", whether appropriate or inappropriate, is likely to have a significant impact on students' capacity to see enough patients.

Differences in the proportion of accessible patients between hospitals, and between audit days, are most plausibly explained by the different mix of patients seen in each hospital, but may also be related to the students being refused entry to whole wards on one occasion but not on another. Differences in the proportion of patients answering "yes" to both audit questions may reflect the different mix of seriously ill patients at the different hospitals, or uncontrolled factors such as the students' dress.

In our study, younger patients were more likely than older patients to agree to be seen and examined by a student, but the difference between the age groups was small. This result should also be treated cautiously as it was not generated during testing of a predetermined hypothesis. Compared with other factors such as the mix of patients in a given hospital, or the attitude of the nursing staff, the age and sex of patients were not critical determinants of student success in seeing patients.

Absence from the ward for treatment or diagnostic tests, which is often cited by teachers as an important obstacle to bedside teaching,[6,7] was a minor problem in this audit. Inaccessibility of patients because of the presence of families or unsympathetic nursing staff is likely to be less often a problem when students are accompanying senior medical staff, while absence from the ward is an obstacle not even the most truculent consultant can overcome. The scheduling of diagnostic tests is probably also an obstacle to students' access to patients which cannot realistically be removed.

The necessity of properly informed consent to see students is not in question, but patients who said that they would see only female students and would not see Asian students raise difficult issues with regard to consent.

It is not certain that the results we obtained reflect the ordinary experience of medical students. The patients we spoke to were asked a hypothetical question and could answer "yes" without actually spending the next hour talking to or being examined by the student. The questions also only asked about contact in "the next 45 minutes". However, our students have other commitments that limit when they can visit the wards and report that it is often impractical to make appointments with patients to return at later times. We also did not ask patients whether they would be willing to see more than one student. We do not encourage students, especially those in later years, to see patients in pairs or groups, but patients may have been willing to see a number of students in succession. The sample of medical students involved in this study was very small, and students with different personal characteristics might obtain different results. Finally, the workload of the students was not equal, and the student auditing the largest hospital may have spent less time with each ward or patient than the students at smaller hospitals. Despite these limitations, our results are probably a closer reflection of the experience of students than studies based on the opinions of teachers.[6,7] We are not aware of any previous studies using similar methods with which our results can be compared.

Inaccessibility of patients, so that students could not even ask if the patient would agree to be seen, was not only the dominant factor diminishing the pool of patients, but the most remediable factor. There are a number of changes that could be implemented in teaching hospitals to improve student learning opportunities. Integrating students more fully into clinical teams would likely overcome many barriers that students face. It may also be necessary to define more closely, and at an institutional level, the meaning of "unfit to see medical students". Clearly, how sick is too sick, or how depressed is too depressed to see a medical student is a matter of judgement. However, while it may, for example, be inconvenient to have a student see a patient being barrier nursed, the skills of taking a history while masked or examining a patient while gowned and gloved are essential, and must therefore be practised by students.

Australian medical schools are under pressure to increase the number of medical students they train. Student numbers are set by the federal government, while hospital bed numbers are set by state governments. Thus, the number of new student places has not been linked automatically to the distribution of teaching hospital beds. Our results suggest that it is already difficult for students to gain adequate exposure to patients in teaching hospitals, and matching student and patient numbers should be a priority.

In the long run it is clear that we must find alternatives to teaching hospitals as the major sites for acquiring clinical skills. Constraints of time and space, however, limit the capacity of general practice and specialist outpatient clinics to replace hospital wards for teaching, and as long as the early postgraduate years focus on the care of hospital inpatients, teaching must do likewise. Simulation is an attractive alternative, and for many technical skills a satisfactory one, though not, at present, for interactional and psychosocial skills. We therefore suggest that there is an urgent need for planning to ensure that medical schools have the resources to produce graduates with an appropriate standard of clinical skill and experience.

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COMPETING INTERESTS

None identified.

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